

# Estimating the Impact of Poverty on the Development of Mental Illness

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# Motivation

- ▶ What is the impact of poverty on mental health?
- ▶ Goal: To investigate the causality of poverty-mental health relationship and potential mechanisms underlying it
- ▶ Implications for more effective policy-making

# Early Literature

- ▶ The Socio-Economic Correlates of Health (Fuchs 2004)
  - ▶ Identified many socio-economic correlates as detrimental to health (e.g. income, education, occupation, age, sex, marital status, ethnicity)
- ▶ Income Related Inequalities in Mental Health (Wildman 2003)
  - ▶ Investigated socio-demographic factors to determine the causes of health inequality over time
    - ▶ Findings: Subjective financial status was a major contributor to health inequality
- ▶ Poverty Impedes Cognitive Function (Mani 2013)
  - ▶ Sought to explain how poverty-related concerns affect behavior and cognitive ability
    - ▶ Findings: Cognitive functioning was impaired even in absence of biological stress responses
    - ▶ Proposed Mechanism: Attentional deficits resulting from diversion of mental resources

# Recent Findings

- ▶ Effects of Economic Insecurity on Mental Health (Rohde 2016)
  - ▶ Explored relationship between economic insecurity measures & the SF-36 mental health index using Australian panel data
    - ▶ Identified many risks as detrimental to mental health (e.g. job insecurity, financial dissatisfaction, income volatility/reduction, lack of access to emergency funds)
- ▶ Mental Health Implications of Repeated Economic Insecurity (Watson & Osberg 2017)
  - ▶ Evaluated hypotheses for “healing” and “breaking-point” models
    - ▶ Found that working-age adults were more likely to recover from past experiences if they were recently secure
    - ▶ For males, only recent shock was predictive of current distress
    - ▶ For males, repeated cycles of insecurity were predictive of higher current distress

# Data Source

- ▶ U.S. National Health Surveys (IPUMS Database)
  - ▶ 33 variables
  - ▶ 206,071 observations
  - ▶ 2005 - 2013
- ▶ Dependent Variables
  - ▶ Depression
  - ▶ Anxiety
- ▶ Explanatory Variables
  - ▶ Poverty (at or below poverty threshold)
  - ▶ Low-Income (annual income less than \$35,000)

# Summary Statistics

	(1)
	mean/sd
Depression	1.78 (3.37)
Anxiety	2.32 (3.57)
Poverty	0.16 (0.37)
Low-Income (less than 35,000)	0.41 (0.49)
Job	0.65 (0.48)
Low-Skill	0.61 (0.49)
Healthy	0.86 (0.35)
Age	47.17 (17.38)
Male	0.46 (0.50)
White	0.78 (0.42)
African American	0.16 (0.37)
Married	0.46 (0.50)
Single	0.27 (0.44)
Divorced/Separated	0.19 (0.40)
Observations	206071

# Conceptual Framework

- ▶ Poverty defined as the lacking the economic resources necessary for consumption of basic needs (e.g. food, housing, clothing)
- ▶ Theoretical mechanisms:
  - ▶ Economic hardship can contribute to elevated stress levels and may cause chronic emotional stress
  - ▶ Financial hardship may impair cognitive abilities and limit working mental capacity
  - ▶ Those with lower income are likely to be limited in their access to health care and mental health resources (e.g. constrained by insurance coverage, transportation, emergency funds)
  - ▶ Those with lower income are more vulnerable to feelings of helplessness (i.e. likely to feel defeated in their lack of ability to influence their financial circumstances)

# Inclusive Framework: Estimated Equations

Model 1: Linear Regression of Depression on Poverty and Low-Income

$$\text{Depression}_{it} = \beta_0 + \beta_1 \text{Poverty}_{ht} + \beta_2 \text{LowInc}_{ht} + \beta_3 \text{MidInc}_{ht} + \beta_4 \text{Employ}_{it} + \beta_5 \text{Industry}_{it} + \beta_6 \text{LowSkill}_{it} + \beta_7 \text{Healthy}_{it} + \beta_8 \text{Age}_{it} + \beta_9 \text{Male}_{it} + \beta_{10} \text{Race}_{it} + \beta_{11} \text{MarStat}_{it} + \beta_{12} \text{Year} + \beta_{13} \text{Region}_{ht} + u_{ht}$$

Model 2: Linear Regression of Anxiety on Poverty and Low-Income

$$\text{Anxiety}_{it} = \beta_0 + \beta_1 \text{Poverty}_{ht} + \beta_2 \text{LowInc}_{ht} + \beta_3 \text{MidInc}_{ht} + \beta_4 \text{Employ}_{it} + \beta_5 \text{Industry}_{it} + \beta_6 \text{LowSkill}_{it} + \beta_7 \text{Healthy}_{it} + \beta_8 \text{Age}_{it} + \beta_9 \text{Male}_{it} + \beta_{10} \text{Race}_{it} + \beta_{11} \text{MarStat}_{it} + \beta_{12} \text{Year} + \beta_{13} \text{Region}_{ht} + u_{ht}$$

# Preliminary Results

	(1) OLS Depress b/se	(2) OLS Anxiety b/se	(3) OLS Low-Skill b/se	(4) OLS High-Skill b/se
Poverty	0.51*** (0.03)	0.50*** (0.03)	0.50*** (0.03)	0.41*** (0.06)
Low-Income (less than 35,000)	0.50*** (0.02)	0.39*** (0.02)	0.27*** (0.03)	0.60*** (0.04)
Mid-Income (35,000 - 74,999)	0.17*** (0.02)	0.11*** (0.02)	0.06* (0.03)	0.17*** (0.02)
Employed	-0.75*** (0.02)	-0.83*** (0.02)	-1.01*** (0.03)	-0.46*** (0.03)
Low-Skill	0.14*** (0.01)	0.06*** (0.02)		
Healthy	-2.94*** (0.03)	-3.10*** (0.03)	-3.11*** (0.04)	-2.98*** (0.06)
Age	-0.02*** (0.00)	-0.03*** (0.00)	-0.03*** (0.00)	-0.02*** (0.00)
Male	-0.33*** (0.01)	-0.38*** (0.02)	-0.46*** (0.02)	-0.25*** (0.02)
African American	-0.21*** (0.02)	-0.44*** (0.02)	-0.44*** (0.03)	-0.47*** (0.03)
Asian	-0.14*** (0.03)	-0.51*** (0.03)	-0.52*** (0.05)	-0.54*** (0.03)
Married	-0.08*** (0.02)	-0.12*** (0.02)	-0.07* (0.03)	-0.15*** (0.03)
Divorced	0.49*** (0.03)	0.47*** (0.03)	0.60*** (0.04)	0.28*** (0.04)
Separated	0.83*** (0.05)	0.72*** (0.05)	0.77*** (0.06)	0.66*** (0.09)
Observations	203417	203408	124186	79222
R-Squared	0.165	0.156	0.160	0.122

# Policy Implications

- ▶ Future Work Strategies:
  - ▶ Identify the common thread underlying poverty-related concerns
  - ▶ Propose potential mechanisms underlying the relationship between poverty/low SES and mental illness
- ▶ Effective Policy Design:
  - ▶ Can increase access to mental health resources
  - ▶ Can attempt to alleviate poverty-related stressors in order to better equip individuals to improve their economic situations